Journal of Soviet Mathematics 1993 vol.66 N5, pages 2506-2511

# Comparison theorems for dam foundation design from back pressure diagram

Gaifutdinov A.

*Kazan Federal University, 420008, Kremlevskaya 18, Kazan, Russia*

## Abstract

Comparison theorems are established for the determination of the subsurface contour of the dam foundation from the seepage back pressure p(x). The corresponding problems are considered in a general setting, which allows curvilinear boundary sections, nonhomogeneous soil, and multiply connected regions. The theorems analyze the sensitivity of the contour to changes in initial data, such as the back pressure diagram, aquifer geometry, race bottom shape, and distribution of seepage coefficients. Similarly to Polozhii's comparison theorems [8] for problems of seepage under head, the proposed theorems can be applied to obtain majorizing bounds for inverse boundary-value problems. © 1993 Plenum Publishing Corporation.

http://dx.doi.org/10.1007/BF01098769